

ABSTRACT OF THE DISCLOSURE

A stabilizer bar for controlling the roll of an automotive vehicle has left and right sections, each provided with a torsion rod and a torque arm. The torsion rods are aligned along a transverse axis and attach to a structural component of the vehicle, while the torque arms are connected to the left and right control arms of the vehicle's suspension system. In addition, the bar has a coupling between the torsion rods of the two sections for controlling the torsional stiffness of the bar. The coupling includes a rotor fitted to one of the torsion rods and a housing fitted to the other torsion rod, with the housing receiving the rotor, such that a cavity exists between the rotor and housing. Both the rotor and housing carry vanes, that alternate so that the vanes of the rotor are located between the vanes of the housing. The cavity enclosed by the housing contains a magneto-rheological fluid. The coupling also includes an electrical coil which surrounds the housing and produces a magnetic field in which the rheological fluid lies. Changes in the magnetic fluid vary the viscosity of the fluid and the torsional stiffness of the stabilizer bar.

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